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ABSTRACT

During one year as a 1968-69 U.S. Office of Education Postdoctoral Fellow at the University of California at Berkeley, the author attended three USOE orientation sessions and ten professional conferences and wrote three papers for presentation at these conferences. He conducted research on educational testing and methods of test analysis, and audited several graduate courses in statistics. Reading activity was concentrated on general education in American universities, statistical analysis, and the Rasch method of test analysis. The year's experience led to the development of several ideas for further defining the as yet ambiguous role of a postdoctoral fellow within the host institution. Establishing informal contacts with faculty members, auditing graduate classes, working closely with one particular faculty member, associating oneself with a research project, or teaching for one semester are some of the possible approaches toward optimizing the benefits of a postdoctoral experience. (RT)

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POSTDOCTORAL FELLOWSHIP PROGRAM IN EDUCATIONAL RESEARCH

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The Postdoctoral Fellowship in Educational Research allowed Dr. LeRoy A. Olson to spend one year studying at the University of California at Berkeley. The following is a summary of training activities undertaken during the year.

Major Formal Activities

1. Orientation program for U.S. Office of Education Postdoctoral Fellows at the Belmont Conference Center, Elkridge, Maryland, on September 15-21, 1968. This program provided an opportunity for intensive interaction with other postdoctoral fellows and numerous opportunities to hear educational leaders and policy makers. Special highlights were several visits to the U.S. Office of Education and an open day which was spent in Washington, D.C. This conference undoubtedly was the high point of my postdoctoral year.

2. Fall Conference of the Student Personnel Association of the California State Colleges at San Francisco on November 1, 1968. The theme of the Fall Conference was The Contemporary Student. The meeting was addressed by professors, legislators and students.

3. National Symposium for Professors of Education Research, sponsored by Phi Delta Kappa and held at the University of Colorado, Boulder, on November 19-21, 1968. Formal presentations by Professors Glass, Gephart, Popham, Guba and Stufflebeam were supplemented by work groups and discussions. My major interest was in the Guba and Stufflebeam presentation on "Evaluation of Instructional Materials and Approaches." A major advantage of the Conference was that the group size (56) allowed a great deal of informal interaction. In three days, one could meet almost all participants. Work groups were limited to six or eight persons.

4. American Educational Research Association Presession on "Sample Free Test Calibration and Person Measurement in Educational Research" at Los Angeles on February 1-5, 1969. The presession, headed by Dr. Benjamin Wright of the University of Chicago, was the most significant activity of my postdoctoral year which was related to measurement. Dr. Wright and his staff presented the test theory developed by the Danish mathematician, Georg Rasch. The presession served to strengthen my understanding of traditional test models, as well as introduce me to a test model which appears to have great potential. Further, the presession enabled me to meet Dr. Rasch and resulted in tentative plans to spend a sabbatical leave at the Danish Pedagogical Institute at Copenhagen, hopefully during the spring and summer of 1971. In addition, I am continuing my correspondence with Dr. Wright and hope to attend future presessions on test calibration. The attendance of my doctoral major advisor, Dr. Chester Harris, at this presession further increased its value to me. I hope to have the test calibration programs of the University of Chicago added to the computer program library at Michigan State University when I return.

5. Meeting of U.S. Office of Educational Postdoctoral Fellows at Los Angeles on February 5, 1969, as an opening session of the American Educational Research Association annual meeting. An afternoon was spent reviewing progress and plans of the postdoctoral fellows. It was especially helpful to discuss strategies for making the remainder of the year as profitable as possible.

6. Annual meeting of the American Educational Research Association at Los Angeles on February 5-8, 1969. This is the one meeting that I have attended faithfully since becoming a professor. The sessions are always directly related to my area of interest. Unfortunately, AERA has grown so large that the annual meeting now tends to be institutionalized and impersonal.

7. Annual meeting of the National Council on Measurement in Education at Los Angeles on February 5-8, 1969. At Session 4.8, Technical Aspects of Measurement I, sponsored jointly by NCME and Division 5 of AERA, presented a paper entitled "Estimating Test Characteristics," which I co-authored with Dr. Mary Alice Burmester. The NCME annual breakfast meeting is an unusually good opportunity to maintain contact with others in the field of tests and measurements.

8. National Conference on Higher Education sponsored by the American Association for Higher Education at Chicago on March 2-5, 1969. This was the first opportunity I have had to attend the National Conference on Higher Education. Many sessions considered problems specifically related to both the University of California at Berkeley and to Michigan State University.

9. Annual Convention of the American Personnel and Guidance Association at Las Vegas on March 30-April 3, 1969. I was invited to participate in a symposium on Residence Hall Environment - Peer Group and Architectural Influence, by the sponsor, Dr. G. Robert Standing. My topic was "An Alternative Model: The Residential College." While attendance at the symposium was disappointingly small, the opportunity for me to meet others interested in research on residence halls was most valuable.

10. Annual Forum of the Association for Institutional Research at Chicago on May 5-8, 1969. I arrived late on May 5th in time to sit in on a computer-assisted Long Range Planning Demonstration. On Wednesday, May 7, I presented a paper entitled "Humanizing Higher Education" as part of a contributed paper session on Institutional Change. An interesting climax to the Forum was a tour of the University of Chicago. University of Chicago planners guided the tour, discussing and pointing out projects and problems in the urban area surrounding the University.

11. Annual meeting of the Western Psychological Association at Vancouver, B.C., on June 18-20, 1969. Although many of the sessions were of general interest, relating to various aspects of mental health, only a few sessions were directly concerned with educational measurement and evaluation. However, I was able to become better acquainted with staff members of the Center for Research and Development in Higher Education.

12. Meeting of the U.S.O.E. Postdoctoral Fellows located at the University of California, Berkeley, and at Stanford University on July 2, 1969. The

meeting was held at the Stanford University Faculty Club. After luncheon, a discussion was held concerning the concept of a postdoctoral year, its implications, and how postdoctoral training might be most profitably carried out. Present were Drs. Bolton, Crosswhite, Olson, Pierce, Scandura and Wallace.

13. Annual College and University Self-Study Institute co-sponsored by the Center for Research and Development in Higher Education and the Western Interstate Commission on Higher Education. The Institute was held at the University of California, Berkeley, on July 7-10, 1969. The theme of Value Change and Power Conflict in Higher Education was treated from various points of view by seven speakers. I was especially pleased at my first opportunity to see and hear Dr. T.R. McConnell. Discussion periods were interesting and coffee breaks allowed me to meet a number of college and university administrators from the western states area.

14. Meetings throughout the year with staff of the Center for Research and Development in Higher Education. Time spent with CRDHE staff averaged somewhat less than one-half hour per month. (A detailed diary of meetings was kept and is available.) Generally, it was necessary to utilize luncheon meetings, and it was sometimes difficult to realize any discussion of substantive matters. It must be concluded that the quantity and quality of the meetings during the year did not allow for the familiarity with the directions and programs of the Center that had been anticipated.

Writing

1. Estimating Test Characteristics, paper co-authored with Dr. Mary Alice Burmester (summary attached).

2. An Alternative Model: The Residential College (summary attached).

3. Humanizing Higher Education (summary attached).

4. General Education Today - in progress. This is an attempt to clarify my thoughts on the nature and future of general education in American universities. It is an especially relevant topic since I am a faculty member of a general education college which is currently undergoing rapid change.

Research

1. Developed formulas for statistical relationships which were presented in Estimating Test Characteristics.

2. Reviewed orientation test scores of students entering Briggs, Madison and Morrill Colleges of Michigan State University. This data was used to update the report given as An Alternative Model: The Residential College.

3. For several weeks, my major activity was a search of the literature on encounter groups, resulting in my paper Humanizing Higher Education.

4. Test calibration by the Rasch method. I am calibrating a sixty item university-level achievement test given to 1100 students in the American

Thought and Language course at Michigan State University. In addition, I have made an item analysis of the test and have done a principal components analysis. This project will continue.

Courses Audited

1. Fall Term, 1968

The Student in Higher Education - Dr. Paul Heist
Correlation and Regression - Dr. Douglas Penfield
Multivariate Analysis I - Dr. Leonard Marascuilo

2. Winter Term, 1969

Factor Analysis - Dr. Henry Kaiser
Multivariate Analysis II - Dr. Leonard Marascuilo
Nonparametric Statistics - Dr. Douglas Penfield

3. Spring Term, 1969

Analysis of Variance - Dr. Douglas Penfield

Areas of Reading Emphasis

1. Early in the year I concentrated on The Impacts of Colleges Upon Their Students, by T.M. Newcomb and K.A. Feldman. This is an amazingly complete review of empirical studies of college students, covering the period since such studies began over forty years ago.

2. During the year, I spent a good deal of time reading the texts associated with the various courses which I audited, primarily in the area of statistics.

3. During winter term, I concentrated on literature on encounter groups, especially as related to institutions of higher education.

4. My major thrust in reading measurement materials has been the book Statistical Theories of Mental Test Scores, by F.M. Lord and M.R. Novick.

5. Most available printed material on the Rasch method of test analysis is now in my possession and has been studied intensively.

6. Toward the end of the year, I have begun to read literature on general education in American universities, such as Daniel Bell's The Reforming of General Education.

Conclusion

The year of postdoctoral study was generally successful. The activities described above served to accomplish the goals as outlined in my study proposal. The role of Postdoctoral Fellow is an ambiguous one. There are several approaches which seem profitable in becoming involved in the activities

of the host institution. One approach is to contact individual faculty members to discuss proposed activities and ask for suggestions. In my case, this approach yielded reactions ranging from friendly encouragement to obvious disinterest. The results were not particularly helpful to me and the approach was bothersome to faculty members. Further, because of travel and other commitments, appointments with faculty members had to be made far in advance, in several cases, as much as one month in advance. Thus, the situation giving rise to a need for consultation had often changed long before the appointment. In some cases, the reputation which University of California, Berkeley, faculty have for inaccessibility to students (and postdoctoral fellows) seems to be deserved.

A second approach is for the postdoctoral fellow to assume the role of student and attend seminars and classes intended for graduate students. This approach was especially helpful to me. Class experiences formed the basis for reading programs and computer exercises. I had many helpful discussions with highly knowledgeable students, especially in the areas of experimental design and statistical analysis. Professors Marascuilo and Penfield were especially helpful. Auditing courses also enabled me to meet and interact with faculty members to a degree not otherwise possible. Unfortunately, this approach was not useful with respect to the Center for Research and Development in Higher Education. Informal group interaction of Center staff members did not exist, or at least was not open to post-doctoral fellows. The group activities which I attended at the Center during the year were two formal symposia, one reception for Mexican interns and one discussion between Center staff members and faculty members of the Callison College of University of the Pacific. In the past, informal bag lunch seminars were held at the Center but were discontinued. These would have been extremely helpful. Many organizations, when faced with the problem of lack of staff interaction, have found a coffee lounge arrangement to be helpful. At the Center, staff members get their coffee from a central location and usually return to their desks to drink it. Fortunately, a Center Review Committee has recognized the seriousness of the problem and has recommended initiation of seminars centered on both individual experts and on significant topics. Considering the lack of informal interaction, attendance at formal staff meetings would have been a most helpful experience. I expressed an interest in attending section meetings, was told that this would be possible, but was never informed of the time and location of the meetings.

A third approach to postdocotral study is perhaps the most common: observe and work with a particular faculty member of the host institution. The desirability of such an arrangement depends a great deal on the host faculty member. Unfortunately, there are no faculty members at the University of California, Berkeley, whose primary interest is applied tests and measurements. Dr. Paul Heist has been active in instrument development and I enrolled in his course during Fall term, finding it a very helpful experience.

A fourth approach might be to associate oneself with a research project such as those carried out by the Center for Research and Development in Higher Education. Personally, I wished to avoid becoming a data analyzer or computer boy during my postdoctoral year. The feasibility of attachement to a project was lessened by the fact that most projects at the CRDHE are of several years duration. Attachment to a particular project would likely mean involvement in only one phase of the project, such as planning, analysis, etc. My preference was to attempt to gain a general knowledge of a number of CRDHE projects.

I would like to suggest a fifth approach which a postdoctoral fellow might use in gaining access to his host institution. The postdoctoral fellow might request to be assigned some formal faculty function during the first academic term of his postdoctoral year. The best approach might be to allow the fellow to teach a class or seminar in his area of specialization. This might serve to gain for the fellow a rapport with other faculty members which might make his year more meaningful and profitable. Since most of the postdoctoral fellows are tenured faculty members of other institutions at rank of associate professor or higher, the host institution should be able to utilize some of the skills they have developed. This teaching experience might be particularly valuable to the fellow if it involved an area in which he had not previously had an opportunity to teach, but an area in which the fellow desires to become more competent. There is a danger that the fellow would become so involved in his teaching that he would exclude other activities. To avoid this dilemma, the formal teaching activity should be limited to a single term, preferably the initial term.

There seem to be many possible approaches toward optimizing the benefits of a postdoctoral experience. A year of general postdoctoral study has not been a part of the American pattern of higher education. Consequently, guidelines for the fellow and for the host institution are mainly concerned with financial aspects and have little to suggest regarding educational goals. Certainly, any such guidelines must allow great freedom in establishing postdoctoral goals and programs. Nevertheless, some guidelines seem desirable to promote greater utilization of the resources of both the postdoctoral fellow and his host institution. While I know that some formal postdoctoral programs exist, such as the one at Educational Testing Service in Princeton, New Jersey, I have no first hand knowledge of such programs and, therefore, cannot comment on them.

Although this postdoctoral year has been a successful one, I have had to assume the role of graduate student more often than I would have preferred. Nevertheless, I have gained much knowledge of the past, present and future of the measurement of student aptitudes and attitudes in higher education. I have sharpened my design, analysis and computer skills and have deepened my understanding of the theory of mental tests. Other benefits of the postdoctoral fellowship have been the opportunity to attend a greater number of professional meetings than is generally possible, and the opportunity to visit several university campuses which I had not seen before.

Residence in the city of Berkeley during the 1968-1969 academic year has allowed my family to participate in the integration of the elementary schools by bussing. (The goal was racial balance in every classroom.) Each term was eventful: the Cleaver lecture controversy in fall, the Third World Liberation Front strike in winter, and the Peoples' Park controversy in spring. The tension of the year may be inferred by noting that University of California, Berkeley, Chancellor Heyns requested and received a three-month leave of absence in addition to his regular vacation.

This combination of study, discussion, observation and travel cannot help but have a broadening effect on my professional competencies.

Summary

ESTIMATING TEST CHARACTERISTICS*

Situations may arise where the characteristics of a test must be estimated prior to the initial test administration. When the test is composed of items of known difficulty and discrimination, the mean and standard deviation can be estimated. Procedures are shown for estimating the standard deviation when the measure of discrimination is the difference between the proportion right in the upper 27% and the proportion right in the lower 27%, commonly known as D. Further, one can determine whether the selected set of items constitutes a test of sufficient reliability for the situation. These techniques also allow for the establishment of grade levels or cut-off points prior to test administration.

*Paper presented at Session 4.8, co-sponsored by Division 5 of the American Education Research Association and by the National Council on Measurement in Education at Los Angeles, on February 6, 1969.

Summary

AN ALTERNATIVE MODEL: THE RESIDENTIAL COLLEGE*

Residential Colleges are a natural extension of the "living-learning" concept where teaching and learning areas are integrated into residence halls. Such colleges are widely used as a means of counteracting some of the disadvantages of a large university. The residential college goal is often to assemble a group of like-minded students in a setting which promotes academic and social interaction. Research has shown that students who select residential colleges may differ markedly in aptitudes and attitudes from those who select traditional colleges in a university.

*Paper presented at a symposium "Residence Hall Environment - Peer Group and Architectural Influence" at the annual convention of the American Personnel and Guidance Association at Las Vegas, on April 1, 1969.

Summary

HUMANIZING HIGHER EDUCATION*

One of the most interesting phenomena of recent years is the development of group methods for the purpose of facilitating change. Our vocabulary has been enriched by terms such as change agent, sensitivity training and T groups. The goal is to consider attitudes, values, feelings and emotions, as well as intellectual and professional aspects of interpersonal relations. These techniques appear to have great potential for bringing about change in higher education.

A milestone in the development of group techniques was the establishment of the First National Training Laboratory on Group Development at Bethel, Maine, in 1947. NTL continues to be an important influence in the training group movement. In addition to NTL, many growth centers and research centers have been established which focus their efforts on training techniques.

Major goals of training groups are to develop our awareness of the emotional reactions of ourselves and others. This awareness will help us to predict the reactions of others and, therefore, help us to behave so that we will reach our goals. In this process, our goals and values may change.

Members of a training group must become sensitive to each other as persons. They must learn to help each other by providing non-evaluative feedback in an open, supportive atmosphere. They must learn to recognize the problems a group encounters and collaborate in solving these problems.

Although many training groups exist in order to help individuals change and grow, groups may also be established for the purpose of inducing change in an organization, such as a university. Creating a more open atmosphere in an organization should improve the probability of finding innovative

solutions to problems. The openness should allow a freer flow of information within the organization. The end product may be a change in the system or style of management, resulting from a change in values.

There are many applications of group training methods cited in the literature. Examples discussed include a large business, a new business, a civil rights group, a large university, and a public school system.

For training methods to be successful, members of an organization must agree on the desirability of working toward change and must be motivated to devote the necessary time and energy. Group membership should be voluntary, although it is difficult to avoid subtle pressure to participate.

Group methods are now widely used in higher education. Much research is in progress which should help us to evaluate group training applications. The values espoused by the training group, namely, concern for scientific inquiry, concern for democratic process, and concern for supportive interpersonal relationships, reflect the highest ideals of our society.

*Paper presented at the 1969 Forum of the Association for Institutional Research at Chicago, on May 7, 1969.